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BOOK REVIEWS

W.D. Clayton & S.A. Renvoize. *Genera Graminum – Grasses of the World*, Kew Bulletin Additional Series XIII. London: Her Majesty's Stationery Office, 1986. 389 pp, 24 figures. No price quoted, but available in Australia for c. $58.

A review of this book has previously been published with reference to the effect it has on the classification of the grass genera of southern Africa (de Winter 1987). A further review with reference to the Australian genera is appropriate. As mentioned by de Winter the Kew herbarium is certainly an excellent venue at which to compile a contemporary account of the world's genera, combining as it does a long tradition of taxonomic and anatomical research together with a fine world-wide collection and library. The considerable fund of knowledge established by agrostologists Stapf, Hubbard and Bor and anatomist Metcalf have been brought to fruition in a succinct way by the morphological and general contributions of Clayton and the anatomical summaries of Renvoize.

The circumscription of genera of this world treatment nevertheless needs closer scrutiny, particularly in regions where local experience and field knowledge has been accumulated. In the case of southern Africa for example, de Winter questions the wisdom of placing fairly unique genera such as *Stiburus* and *Diandrochloa* into synonymy with *Eragrostis* or the recently established segregate arundinoid genera of southern Africa (Conert 1987) into synonymy with *Rytidosperma*, itself a fairly dubious split from the cosmopolitan genus *Danthonia*. In the Australian context there are similar examples e.g. the placing of *Thellungia* into synonymy with *Eragrostis* and the sinking of *Pseudopogonatherum* with *Eulalia* despite the fact that the former genus has paired pedicelled spikelets and a distinctly awned upper glume. Overall the tendancy seems to have been to adopt an attitude of combining genera e.g. *Diplachne* with *Leptochloa*, *Scrotochloa* with *Leptaspis*, *Beckeropsis* with *Pennisetum*, *Diectomis* with *Andropogon* and the examples given above, although the cases for segregating these genera in the first place have been fairly lucidly and logically gone into e.g. Judziewicz (1984) where *Scrotochloa* is separated from *Leptaspis* by 15 seemingly good characters. The recent generic splits in the Triticeae (Löve 1984; Dewey 1984), based to a large extent on genomic characters, although with a slight degree of morphological back-up, have been virtually ignored.

On the other hand the lumping process may not have gone far enough e.g. the recent treatment of *Mnesithea* (Veldkamp *et al.* 1987), where four of the genera treated as separate in Genera Graminum have been sunk under *Mnesithea*, but the rationale for doing so is fairly clearly explained. In a similar vein is the recent placing of most of Australia's *Brachiaria* species and *Panicum maximum* in *Urochloa* (Webster 1987), which at first examination does not seem plausible, but has some support at the level of type of C4 leaf anatomy (Hattersley 1987). However the last three papers were published since Genera Graminum, giving an indication of the amount of work currently being undertaken on generic limits in the Poaceae.

In the main however Clayton and Renvoize have done a magnificent task of summarizing the contemporary scene of how the world's genera are constituted and classified. They present their own views and would be the first to admit that their work does not represent the last word in this area. Since their book was published a fair number of genera have either been published or are in the pipeline and others have been placed in synonymy. The trend will probably continue as generic limits are currently being researched with increasing vigour, a reflection of this activity being the symposium on grass classification and evolution in Washington in 1986 (Soderstrom *et al.* 1987). A recently published review on taxonomy in the tropics (Ng 1988) maintains there is a high degree of subjectivity in the way we circumscribe our taxa, and this is certainly reflected by the lack of agreement by grass taxonomists as to generic boundaries in many genera. Ng asserts that the percentage disagreement of taxonomists working on the same group of plants "may range between 5 and 30%" This subjective element certainly accounts for the difference of opinion between agrostologists on the question of generic limits.

In his review de Winter summmarizes well the contents of the book that there is not much point repeating that here. Some final comments of the review in terms of the great benefits of this compilation are however worth re-stating. "The authors have in the Genera Graminum brought together a vast amount of information and successfully summarized progress made during the last decades in grass taxonomy. All agrostologists are in their debt. In the light of the strongly traditional, and not entirely consistent approach followed, a 'modern' synthesis of the generic classification of the grasses has, in my opinion, not been fully achieved. This is most likely what the authors themselves meant to convey when they advised the reader that '...there is something here to annoy everyone, so do not bother to chastise – think rather to improve.' We await a definitive treatment of grass genera in the future." Whether this is a possible goal in view of the degree of subjectivity in our methods of circumscribing genera, is debatable. However techniques of accumulating data (Watson 1987) and analyzing it cladistically (Kellogg 1987) and phenetically (Baum 1987) with the aid of computers, give hope for the future.

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WEBSTER, R.D.(1987). The Australian Paniceae, 322 pp. Berlin and Stuttgart: J. Cramer.

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R.D. Webster. *The Australian Paniceae (Poaceae)*. Berlin and Stuttgart: J. Cramer, 1987.

This book is a precursor to the Flora of Australia account of the Paniceae. The descriptions and keys have been computer generated using the DELTA package of M. Dallwitz (1986) and are an extension of those produced by the same author for the genus *Digitaria* (Webster 1984), both a result of three years spent at the Taxonomy Unit of the Research School of Biological Sciences on a grant from the Australian Bureau of Flora and Fauna, through the Australian Biological Resources Study scheme. Thus far